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CONTENTS

Erigeron in North Dakota.—*J. Lunell* 1
Adicea.—*J. Lunell* 6
New Plants from North Dakota.—*J. Lunell* 12, 141, 343
Notes on Our Local Plants.—*J. A. Nieuwland* 14, 41, 98, 217, 274, 289, 317, 346
Daily Observations of Our Local Birds.—*Brother Alphonsus* 23
A Correction 29
Obituary 30
Michigan Bird Life 32
A Question of Nomenclature. (Plate I.) *S. W. Geiser* 33
Song Season of Our Birds in 1912.—*Bro. Alphonsus* 48
Our Birds in the Spring of 1912.—*Bro. Alphonsus* 50
Some Midland Dogbanes.—*J. A. Nieuwland* 53
Evactoma.—*J. A. Nieuwland* 57
Nesting Habits of Our Birds.—*Bro. Alphonsus* 60
Midland Witch Hazels.—*J. A. Nieuwland* 61
Nesting Habits of Our Birds.—*Bro. Alphonsus* 65
The Generic Name of the White Pine.—*J. A. Nieuwland* 68
Our Birds in the Summer of 1912.—*Bro. Alphonsus* 70
Seedless Oranges, A Historical Note 76
Certain Violet Names.—*Edward L. Greene* 79
A New Midland Violet and Some Notes on "Cleistogamous" Flowers. (Plates II. and III.)—*J. A. Nieuwland* 85
Some Littoral Algae of Puget Sound.—*Chas. O. Chambers* 91
Migration of Our Birds in the Autumn of 1912.—*Bro. Alphonsus* 125
An Older Name for Listera.—*J. A. Nieuwland* 128
New Plants from Various Places.—*J. A. Nieuwland* 129
Book Note 133
Viola arvensis *Murr.* in Northern Indiana.—*J. A. Nieuwland* 134
Rosa in North Dakota.—*J. Lunell* 135
Another Rhus glabra Segregate from Nebraska.—*J. Lunell* 147
Notes on Box Elders.—*B. F. Bush* 148
Notes on Priority of Plant Names.—*J. A. Nieuwland* 150
Our Birds in the Winter of 1912-13.—*Bro. Alphonsus* 158
Comparative Migration of Our Birds in Spring.—*Bro. Alphonsus* 161
Linnaea americana in Indiana 166
In the Woods.—*Walter L. Hahn* 167
Critical Notes on New and Old Genera of Plants.—*J. A. Nieuwland* 170, 253
Priority of Hierochloa.—*R. M. Kaczmarek* 198
Notes on Cleistogamous Flowers of Violets.—*J. A. Nieuwland* 198

Polygonum Longistylum Small, A Synonym.—*J. A. Nieuwland*.....200
Our Birds in the Spring of 1913.—*Bro. Alphonsus*.....201
Studies in Viola.—*J. A. Nieuwland*.....207
Our Birds in the Autumn of 1912.—*Bro. Alphonsus*.....243
Our Birds in the Summer of 1913.—*Bro. Alphonsus*.....248
Forest Arboreta.—*Chas M. Dow*.....255
Some New American Lythra.—*J. A. Nieuwland*.....265
Migration of Our Birds in the Spring of 1913.—*Bro. Alphonsus*.....271
Some Common Birds.—*Victor Carpenter*.....283, 298
Notes on Seedlings. (Plates IV., V, VI, VII, VIII, IX, X)—*Richard Vogt*.....287
Our Birds in the Autumn of 1913.—*Bro. Alphonsus*.....305
A New Variety of Sambucus.—*J. A. Nieuwland*.....310
Field Notes of Western Botany.—*Edw. L. Greene*.....311
Migration of Our Birds in the Autumn of 1913.—*Bro. Alphonsus*.....327
New Species of Ranunculus.—*Edward L. Greene*.....333
The Anatomy of Megalodonta Beckii.—*A. V. Hoeck*.....336
A New Antennaria.—*B. F. Bush*.....352
Notes on Hemerocallis.—*N. M. Grier*.....353
Comparative Migration of Our Birds in Autumn.—*Bro. Alphonsus*.....355

CORRECTION

For *Chenopodium virgatum* Lunell, A. M. N. III. p. 345 (1914), substitute: *Chenopodium ferulatum*. The former name is antedated by a *Chen. virgatum* Thunberg, Nov. Ac. Soc. Sc. Ups. VII. p. 143 (1815). (Japan).

For the same reason for *Chenopodium virgatum junceum* Lunell (l. c.) substitute: *Chenopodium ferulatum junceum*.

J. LUNELL.

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Erigeron in North Dakota.—II.

BY J. LUNELL.

When publishing *E. multicolor* in the issue of this journal for July 1912, the manuscript having been written some weeks beforehand, I intimated that I expected to collect during the incumbent season additional material of specimens standing near to this species in general appearance, but with some characters more or less different. The result was richer indeed than anticipated, and before introducing these plants, I only wish to emphasize that whatever the merit is of this paper, it has been enhanced by many valuable suggestions from Dr. E. L. Greene which herewith are appreciatively acknowledged. It is worth adding that in the species where there is a dentation of the leaves, the teeth are as a rule quite small, often needing the aid of a lens to be recognized, and in poorly developed individual plants this dentation is rudimentary and often altogether absent.

In order to draw the difference between the species belonging to this group of daisies, I believe the following key will be helpful:

Clavis Analytica.

A. Flores radiati 6–8 mm. longi, angusti.
  a. Folia integra.
    b. Caules hirsuto-scabri.....1. *E. asper* Nutt.
    b. Caules pilis mollibus longitudinis inequalis repandis et appressis tenuiter vestiti.....8. *E. asper* var. *appressus*.
  a. Aliquot saltem folia dentata.
    c. Folia inferiora plerumque brevia et lata..9. *E. abruptorum*.
    c. Folia inferiora spatulato-lanceolata.....2. *E. multicolor*.
    c. Folia inferiora longa, angusta, tenuiter aculeata.

d. Dentes utrimque 4–5, ampli, attenuato-acuti.....10. *E. oxyodontus.*
d. Dentes pauciores, dispersi, parvi.
e. Caules pilis diffusis vel retrorsis vestiti.....11. *E. oligodontus.*
e. Caules pilis mollibus longitudinis inaequalis repandis et appressis tenuiter vestiti...12. *E. oligodontus* var. *acuminatus.*
A. Flores radiati 6–8 mm. longi, lati, folia 3-nervata.....13. *E. subcostatus.*
A. Flores radiati 8–12 mm. longi, lati.
a. Folia inferiora denticulata.....14. *E. procerus.*
a. Folia omnia integra.....15. *E. anodontus*

Analytical key.

A. Rays 6–8 mm. long, narrow.
a. Leaves entire.
b. Stem hirsutely scabrous.....1. *E. asper* Nutt.
b. Stem scantily covered with soft hairs of unequal length, turned upwards and appressed.....8. *E. asper* var. *appressus.*
a. At least some of the leaves dentate.
c. Lower leaves generally short and broad..9. *E. abruptorum*
c. Lower leaves spatulate-lanceolate....2 *E. mu ticolor*
c. Lower leaves long and narrow, slenderly pointed.
d. Teeth 4–5 on each side, large, attenuate pointed.....10. *E. oxyodontus.*
d. Teeth fewer, scattered, small.
e. Stem covered with spreading or retrorse hairs.....11. *E. oligodontus.*
e. Stem scantily covered with soft hairs of unequal length, turned upwards and appressed.....
12. *E. oligodontus* var. *acuminatus.*
A. Rays 6–8 mm. long, broad, leaves 3-nerved..13. *E. subcostatus.*
A. Rays 8–12 mm. long, broad.
a. Lower leaves denticulate.....14. *E. procerus.*
a. All the leaves entire.....15. *E. anodontus.*

8. *Erigeron asper* var. **appressus** var. nov.

Vide Clavem analyticam.

The character mentioned in the key seems to make the only difference from the species, as described in the Midl. Nat. II (p. 254). The variety was collected on low prairie at Dickinson, Stark County, on June 16, 1912, by Mr. Clarence H. Waldron.

9. **Erigeron abruptorum** sp. nov.

Caulis solitarii, simplices, 1 usque 2-(interdum 3 usque 4-) capitati, 20–30 cm. alti, pilis diffusis vel magis minusve appressis copiose usque tenuiter vestiti. Distinctio laminarum et petiolorum foliorum magis conspicua, lamina quidem ad laminas propinquorum latiore. Folia adpresse pilosa, radicalia late usque anguste ovalia, serrato-dentata, apice acuta vel retusa, in petiolos alatos ad longitudinem laminarum prope accedentes sensim reducta. Folia caulina inferiora lanceolata usque late lanceolata, serrato-dentata quoque, apice acutula, in petiolum longum sensim reducta; folia sursum sensim diminuta, anguste lanceolata, longe acuminata, integra, sessilia. Capitula circiter 2 cm. diametro (radiis albis inclusis).

Stem single and simple, 1 to 2–(sometimes even 3 to 4-) headed, 20–30 cm. high, abundantly to scantily covered with spreading or more or less appressed hairs. The foliage of this species is more differentiated into lamina and petiole, the lamina broader in proportion than is the case with its relatives, and appressed-hairy. Radical leaves broadly to narrowly oval, serrate-dentate, acute or blunt at the apex, tapering into winged petioles of approximately the same length as the lamina. Lower stem leaves lanceolate to broadly lanceolate, also serrate-dentate, with acutish apex and tapering into a long petiole; the leaves are gradually reduced in size upwards, narrowly lanceolate, long-acuminate, entire, sessile. Heads about 2 cm. in diameter, including the white rays.

Collected by the writer on top of a high bluff, on June 19, 1912, at Butte, Benson County.

10. **Erigeron oxyodontus** sp. nov.

Caules simplices, plerumque 3-capitati, 30–35 cm. alti, pubescentes, foliis tenuiter vestiti. Folia dimidiae partis superioris anguste linearia, integra, longe acuminata, dimidiae partis inferioris

lanceolata, acuminata, in petiolum longum lentissime reducta, 5–7 cm. longa, petiolo longitudine aequali. Folia radicalia et caulina inferiora dentibus 4-5 amplis attenuato-acutis marginaliter utrimque provisa. Capitula 1.5-2 cm. diametro (radiis albis inclusis).

Stems simple, usually 3-headed, 30–35 cm. high, pubescent, sparingly covered with leaves, these being narrowly linear, entire and long-acuminate on the upper half, and on the lower half lanceolate, acuminate, very gradually tapering into a long petiole, 5-7 cm. long, with petiole of the same length. Radical and lower cauline leaves with 4-5 large, attenuate-pointed teeth on each side of the margin. Heads small for the size of the plant, 1.5–2 cm. in diameter, including the rays.

Collected by the writer in wet soil on June 19, 1912, at Butte, Benson County.

11. **Erigeron oligodontus** sp. nov.

Caules 1–6, simplices, 1 usque 4-capitati, graciles, 25–35 cm. alti, pilis diffusis vel retrorsis vestiti, restricte foliosi. Folia caulina superiora sessilia, anguste linearia vel bracteis similia, integra, inferiora et radicalia lanceolata usque anguste lanceolata, 5–15 cm. longa (petiolo incluso), ad basin sensim reducta, apice tenuissime aculeata, alia marginibus integris, alia dentibus paucis, insigniter salientibus, parvis, interdum sub lente solum manifestis ornata. Capitula circa 2–2.5 cm. diametro (radiis albis vel rubicundis inclusis).

Stems 1–6, simple, 1 to 4-headed, slender, 25–35 cm. high, covered with spreading or retrorse hairs, sparingly leafy. Upper stem leaves sessile, narrowly linear or bract-like, entire. Lower cauline and radical leaves lanceolate to narrowly lanceolate, 5-15 cm. long (including the petiole), gradually tapering toward the lower end, very slenderly pointed at the apex, some with entire margins, others with few, remarkably salient, small teeth, sometimes only visible under a lens. Heads about 2–2.5 cm. in diameter, including the white or pink rays.

Frequent at Butte, Benson County, in damp meadows. It was collected there by the writer on June 19, 1912.

12. **Erigeron oligodontus** var. **acuminatus** var. nov.

Vide Clavem analyticam.

The scanty pubescence of the stem with upturned, appressed

hairs being the feature of this variety, it was collected by the writer on June 24, 1906, in low meadow at Leeds, Benson County.

13. **Erigeron subcostatus** sp. nov.

Caulis solitarius, simplex, erectus vel leviter ascendens, 1 usque 4-capitatus, circiter 50 cm. altus, pubescentia brevi, tenui, alba, adpressa et foliis 8–12 vestitus. Folia radicalia et caulina inferiora lanceolata usque late lanceolata vel oblanceolata, integra vel remote denticulata, acuminata, in petiolum alatum angustata, adpresse pilosa, venis duobus lateralibus per totam laminae longitudinem conspicue currentibus, etsi in aliquot foliis aliquantulum obscuris. Folia superiora angustius lanceolata, sursum reducta, sessilia, gracillime acuminata, integra. Capitula solitaria vel corymbosa, 2–3 cm. diametro (radiis inclusis), 7–10 mm. alta. Bracteae lineari-acuminatae, late scarioso-marginatae, laxiores, indumento albo appresso vestitae. Radii 130–150, albi, lati.

Stem single, simple, erect or slightly ascending, 1 to 4-headed, about 50 cm. high, with a short, scanty, white, appressed pubescence, and 8–12 leaves. Radical and lower cauline leaves lanceolate to broadly lanceolate or oblanceolate, entire or distantly denticulate, acuminate, tapering into a winged petiole, appressedly hairy, with two lateral veins running quite prominently through the entire length of the lamina, though the venation is somewhat obscure in part of the leaves. Upper leaves more narrowly lanceolate, reduced in size upwards, sessile, slenderly acuminate, entire. Heads single or corymbose, 2–3 cm. across (including the rays), 7–10 mm. high. Bracts linear-acuminate, broadly scarious-margined, with a white, appressed indument, quite loose. Rays white, 130–150, broad, rather short for the disk.

The large heads, the white, broad, rather short rays, and the thin, 3-nerved, partly denticulate leaves are a combination of characters distinguishing this daisy from kindred species. It was collected in shade along the Heart River, a tributary of the Missouri, at Dickinson, Stark County, on June 23, 1912, by Mr. Clarence H. Waldron.

14. **Erigeron procerus** sp. nov.

Caules 1-2, simplices, 2 usque 4-capitati, 35–40 cm. alti, pubescentia densa, paene appressa pilorum inaequalium provisi. Folia radicalia spatulata, caulina inferiora lanceolata vel anguste lanceolata, omnia acuta, petiolis laminae aequalibus ornata,

denticulata vel aliquot integra. Folia caulina superiora linearia, integra. Capitula 3-4 cm. diametro (radiis albis, latis inclusis).

Stems 1-2, simple, 2 to 4-headed, 35–40 cm. high, with a thick, almost appressed pubescence of unequal hairs. Radical leaves spatulate, lower cauline lanceolate or narrowly lanceolate, all acute, with petioles as long as the laminae, and denticulate, or some of them entire. Upper stem leaves linear, entire. Heads 3–4 cm. in diameter, including the white, broad rays.

Collected on a roadside, in subsoil clay from a ditch, by the writer on June 19, 1912, in the prairie not far from Butte, Benson County.

15. **Erigeron anodontus** sp. nov.

Caulis solitarius, simplex, 3-capitatus, 45 cm. altus, restricte pubescens. Folia radicalia anguste lanceolata vel oblanceolata, 10–20 cm. longa (petiolo longitudinis partes circiter duas e tribus occupante incluso). Folia caulina inferiora anguste oblanceolata, sessilia, 10–15 cm. longa, superiora linearia, 4–7 cm. longa. Folia omnia acuminata, integra. Capitula 3 cm. diametro (radiis latis albis inclusis).

Stem single, simple, 3-headed, 45 cm. high, sparingly pubescent. Radical leaves narrowly lanceolate or oblanceolate, 10–20 cm. long, including the petiole, which occupies about ⅔ of the entire length. Lower stem leaves narrowly oblanceolate, sessile, 10–15 cm. long. Upper stem leaves linear, 4–7 cm. long. All the leaves acuminate, entire. Heads 3 cm. in diameter, including the broad, white rays.

Collected by the writer in dry pasture land at Butte, Benson County, on June 23, 1907.

Leeds, North Dakota.

Adicea.

BY J. LUNELL.

The genus *Adicea* belonging chiefly to the tropics, represented there by about 150 species, and being most abundant in tropical America, has 4 species in Florida, but only one of these, *A. pumila* (L.) Raf., has a territory extended beyond the northern boundary

of that state. In adding to the species 4 new relatives from the northern and central United States, I have found it convenient to divide them in one black-seeded and one green-seeded group and arrange them under the following key:

A. Achaenia nigra vel subnigra.
  a. Planta 4–8 cm. longa, per partem dimidiam superiorem foliosa, simplex, achaenia 1.5 mm. longa and 1.5 mm. lata.....1. *A. fontana.*
  a. Planta 10–30 cm. longa, prope basin sursum ramosa, achaenia 2 mm. longa, 1.5 mm. lata...2. *A. opaca.*

A. Achaenia viridia.
  a. Planta 15–25 cm. longa, simplex, per partem dimidiam superiorem foliosa, achaenia 1.5 mm. longa, 1¼ mm. lata.....3. *A. Nieuwlandii*
  a. Planta 30–60 cm. longa, prope basin sursum ramosa.
    b. Achaenia 1 mm. longa, ½–⅔ mm. lata....4. *A. Deamii.*
    b. Achaenia 1.5 mm. longa, 1. mm. lata..5. *A. pumila* (L) Raf

A. Achenes black or blackish.
  a. Plant 4–8 cm. long, leafy above the middle simple, seeds 1.5 mm. long and 1.5 mm. wide..1. *A. fontana.*
  a. Plant 10–30 cm. long, branching from near the base, seeds 2 mm. long, 1.5 mm. wide....2. *A. opaca*

A. Achenes green.
  a. Plant 15–25 cm. long, simple, leafy above the middle, seeds 1.5 mm. long, 1¼ mm. wide..3. *A. Nieuwlandii*
  a. Plant 30–60 cm. long, branching from near the base.
    b. Achenes 1 mm. long, ½–⅔ mm. wide....4. *A. Deamii.*
    b. Achenes 1.5 mm. long, 1 mm. wide..5. *A. pumila* (L.) Raf.

1. **Adicea fontana** sp. nov.

Caulis annuus, gracilis, simplex, teres, pellucidus, paene erectus, appresse pilosus vel glabratus, 4–8 cm. altus, recens apice tantum foliosus, postea autem foliis geminis in caule medio vel iuxta eum positis. Quae folia infima parvo sunt, 3–5 mm. diametro, orbicularia, vel basi rotundata vel paene truncata suborbicularia, margine fere integro et petiolis longitudini foliorum aequalibus. Folia omnia opposita et petiolata geminaque 2–4 in summo caule conferta, quae ampliora, 7–20 mm. longa, viva etiam membranacea, ovata, magis minusve

crenata, 3–4 vel interdum 5-dentata, basi cuneata vel rotundata, apice brevi-acuminata, appresse et breviter pilosa, denique glabrata, petiolis 1-5–1-3 longitudinis foliorum ornata sunt. Flores minimi in axillis foliorum congesti, sessiles vel subsessiles, petiolo multo breviores. Calyx dentes lineares tres habet, breviores achaeniis subatris (maturis atris), late ovatis, subplanis, 1.5 cm. longis et latis, acutulis.

Stem annual, slender, simple, terete, pellucid, almost erect, or ascendent, appressed-hairy or glabrate, 4–8 cm. high, leafy only at the top when young, later with one pair of leaves on or somewhat above or sometimes even below the middle of the stem. These lowest leaves are small, 3–5 mm. transversely, orbicular or nearly so, with rounded or almost truncate base and quite entire margin, and with petioles as long as the leaves. All the leaves are opposite and petioled, and 2–4 pairs are crowded at the top of the stem, and these are larger, 7–20 mm. long, almost membranous even when fresh, ovate, more or less crenate with 3 to 4 teeth, or sometimes 5, cuneate or rounded at the base, with short-acuminate apex, appressedly short-pilose, at length glabrate, 3-nerved from the base, the pair of lateral nerves branching out to the lower teeth and ending in the 2nd tooth, with one pair of lateral nerves for the uppermost pair of teeth; petioles 1-5 to 1-3 of the length of the blade. Flower clusters small, sessile or subsessile in the axils, and very much shorter than the petioles. Calyx with 3 linear teeth, not as long as the blackish (at full maturity black), broadly ovoid, flattened achenes, which measure 1.5 mm. in length and width, acutish.

This plant may be found on a narrow strip along the boggy margin of a rill, in deep shade, often hidden beneath larger plants, in the woodland of Pleasant Lake, Benson County, North Dakota, and localities with similar natural conditions favoring the growth of this species are very rare within the state. The plants were collected by the writer several times between July 3 and September 2 in the years 1911–12, the latter date furnishing the mature plant which even then, at the close of the season, just immediately before the frost, proved to be of its usual, very small size.

2. **Adicea opaca** sp. nov.

Caulis annuus, simplex, vel ramis brevibus, adscendentibus singulis usque ternis oppositis vel de axillis foliorum orientibus

vestitus, erectus vel in solo incurvatus, 1–3 dm. altus, crassus, exigue et appresse pilosus vel glabratus, pellucidus. Folia opposita gemina 3 caulem et gemina 3 apicem frequenter occupantia, succulenta (siccata membranacea), 2–6 cm. longa, 1–4 cm. lata (ramorum 1–2 cm. longa, 0.5–1.5 cm. lata), ovata, breviter vel nequaquam acuminata, dentibus 5–9 crasse crenato-serrata, cuneata vel basi rotundata, 3-nervata. Florum cymi 5–6 in caule, 1 vel 2 in ramis congesti, in axillis foliorum brevi-pedunculati, petiolis subtendentibus breviores. Pedunculi, pedicelli, sepala hyalino-marginati. Achaenia, aliquantulum aspera vel tuberculata, ovata, subplana, 2 mm. longa, 1.5 mm. lata, acutula.

Stem annual, simple or with 1–3 pairs of short, ascending branches, opposite and growing from the leaf axils, erect or bent on the ground, and in the latter case having the lower side covered with rootlets penetrating the loose soil or the moss, 1–3 dm. high, fleshy, sparingly appressed-hairy or glabrate, pellucid. Leaves opposite, usually 3 pairs along the stem and 3 pairs at the top, watery (after drying membranous), 2-6 cm. long, 1–4 cm. wide (those of the branches 1–2 cm. long, 0.5–1.5 cm. wide), ovate, shortly or not at all acuminate, coarsely crenate-serrate with 5–9 teeth, cuneate or rounded at base, 3-nerved with the lateral nerves ending in the 2nd tooth, with 1 pair of petioles as long as the blades, the others shorter. Flower clusters 5–6 on the stem, 1 or 2 on the branches, short-peduncled in the leaf axils, shorter than the subtending petioles. Peduncles, pedicels and sepals with hyaline margins. Achenes with or without a greenish blush, somewhat roughish or tuberculate, ovoid, flattened, 2 mm. in length and 1.5 mm. in width, acutish.

In measuring the seeds as well as all the other parts of this and the preceding species, care was taken to use only full-grown plants, collected at the end of the season, and seeds that had dropped spontaneously from their receptacles.

The plant grows in damp, but drained soil, well shaded, somewhat distant from the rill where the preceding species thrives. Both of them enjoy luckily such natural advantages that there seems to be no danger of their extermination, as is the case with prairie plants. They don't need to fear the plow or the pasturing cattle which apparently has no appetite for them. They are fairly well established, sufficient in numbers to fill the wants of even a score of botanists, without visible lessening of the supply—

a boon which can not be overestimated, considering the fact that Pleasant Lake, N. D., is their only habitation known, now and perhaps for the future.

A. opaca was collected there by the writer on July 28 and September 2, 1912 (the type specimen made up from plants of the latter date.)

3. **Adicea Nieuwlandii** sp. nov.

Caulis annuus, erectus vel ascendens, simplex, glaber, pellucidus, supra dimidiam partem foliosus. Folia geminorum 5–7. Succulenta (siccata membranacea), 2–4 cm. longa, 1–2.5 cm. lata, ovata, nonnihil acuminata, dentibus 4–7 crasse crenato-serrata, basi rotundata vel cuneata, 3-nervata, exigue et appresse pilosa vel glabrata, petiolis omnibus lamina brevioribus. Florum cymi 5–6, in axillis foliorum brevi-pedunculati. Achaenia 1.5 mm. longa, ¾–1¼ mm. lata, sive aequaliter viridia sive punctis obscurius viridibus marginaliter vestita.

Stem annual, erect or ascending, simple, glabrous, pellucid, leafy above the middle. Leaves 5–7 pairs, watery (after drying membranous), 2–4 cm. long, 1–2.5 cm. wide (the lowest, especially if there is some rudimentary branching, very small, 1 cm. long or less), ovate, somewhat acuminate, coarsely crenate-serrate with 4–7 teeth, rounded or cuneate at base, 3-nerved, with the lateral nerves ending in the 2nd tooth, appressedly short-hairy or glabrate, petioles all shorter than the laminae. Flower clusters 5–6 in the leaf-axils, short-peduncled. Achenes 1.5 mm. long, ¾–1¼ mm. wide, either uniformly green or with a dotted darker green lining along the margin. While the size of the achene is almost invariably constant in the other species here described, its width in this species is quite variable.

The late date of its collection (October 19, 1912) surely quaranteed a ripe specimen. It was collected at Notre Dame, Indiana, by Prof. J. A. Nieuwland and was named in his honor.

4. **Adicea Deamii** sp. nov.

Caulis annuus, ramos diffusos vel aequatos etiam propemodum de basi emittens, vel simplex, adscendens vel paene erectus, 30–40 cm. altus, succulentus, glabratus, pellucidus. Folia gemina 7–10, opposita, succulenta (siccata membranacea), 2–9 cm. longa, 1.5–4 cm. lata (ramorum 2–4 cm. longa, 1–2 cm. lata), ovata, brevi-acuminata, dentibus 6–12 crasse crenato-serrata, basi

cuneata vel rotundata, 3-nervata, petiolis lamina brevioribus. Florum cymi 8–10 in caule, 3 vel 4 in ramis, in axillis foliorum graciliter pedunculati et pedicellati. Achaenia 1 mm. longa, ½–⅔ mm. lata, flavido-viridia, aliquantulum punctata, nihilominus autum aequalius colorata, apice acuto.

Stem annual, branching from near the base with spreading or even horizontal branches, or simple, ascending or almost erect, 30–40 cm. high, fleshy, glabrate, pellucid. Leaves opposite, 7–10 pairs, watery (after drying membranous), 2–9 cm. long, 1.5–4 cm. wide (those of the branches 2–4 cm. long, 1–2 cm. wide), ovate, short-acuminate, coarsely crenate-serrate with 6–12 teeth, cuneate or rounded at base, 3-nerved with the lateral nerves ending in the 2nd tooth, petioles shorter than the blades. Flower clusters 8–10 on the stem, 3 or 4 on the branches, in the axils of the leaves on slender peduncles and pedicels, about ⅓ as long as the subtending petioles. Achene 1 mm. long, ½–⅔ mm. wide, yellowish greene, somewhat dotted, but still rather uniformly colored, less compressed than in the other species, with acute apex.

The species is represented in my herbarium by two sheets. One was collected on August 24, 1902, in rich, moist woods in Wells County, Indiana, by Mr. Chas. D. Deam, for whom the species is named. It is a large plant, and its having so remarkably small achenes I at first ascribed to its probable immaturity on account of the rather early date for its collection. Later, when I received from Prof. J. A. Nieuwland a sheet, collected at Mineral Springs, Indiana, on the 26th of September, 1912, I noticed how at this ripe old age the size of the achene was not larger, and thus must represent the normal manifestation of the species.

5. *Adicea pumila* (L.) Raf.

Preliminary to all the work here needed, it is necessary to know what *A. pumila* is, and this in especially all-important in regard to the green-seeded species. Through the courtesy and kindness of Dr. Edward L. Greene I received some time ago elaborately selected specimens of fully developed *A. pumila*, collected late in the season in the Potomac Valley. The study of these aided me in attributing to this species the following differential characters, most of them noticeable only in the mature plant.

Stem reaching a length of 6 dm., with later on spreading branches, some of which are often longer than the part of the stem

above their attachment; leaves not unusually becoming 12 cm. long and 7 cm. wide, 3-nerved at base, with the lateral nerves ending in the 1st or 2nd tooth, sometimes even in the 3rd and 4th from above; leaf-margins with 8–16 teeth; petioles very slender, in the middle of the stem longer and toward the apex shorter than the laminae; flower clusters 8 on the stem, 4 on the branches, spreading on long and slender pedicels. Achenes 1.5 mm. long, 1 mm. wide, more or less narrowly ovoid, only slightly acutish and slightly compressed, colored light green and beautifully sprinkled with dark green dots, which are either distinctly separate or closer together, then looking reticulated or like rosaries. This being our largest species, its name suggests a plant of dwarfy dimentions and is a misnomer, indicating that Linnaeus made his description from an immature or poorly nourished specimen.

Leeds, North Dakota.

New Plants from North Dakota.—X.

BY J. LUNELL.

Ranunculus Waldronii sp. nov.

Caules, pedunculi, petioli, margines foliorum, sepala sparsim pilosi, denique glabrati. Caules 1—complures, 7–12 cm. alti, de fasciculo radicularum carnosarum perennium oriundi, floribus paucis—compluribus ornati. Folia radicalia 2–5, anguste—late elliptica usque ovalia, basi cuneata, apice acutulo, sive integra sive apice 2 vel 3 lobis brevibus exornata, petiolo laminae aequali vel duplo longiore. Folia caulina aut integra, anguste elliptica, aut profunde usque basin paene fissa, lobo mediano amplo, latiore (sive integro sive apice 2 vel 3 lobis brevibus exornati), lateralibus vel omnibus lobis linearibus. Petala parva, anguste obovata, 5–8 mm. longa, 3–5 mm. lata, sepala excedentia. Capitula carpellorum sphaerica. Achaenia turgida, glabra, dorso rotundato, rostro brevi adunco provisa.

Stems, peduncles, petioles, leaf-margins and sepals sparingly hairy, at length glabrate. Stems 1–several, 7–12 cm. high, from a fascicle of numerous, fleshy, fibrous, perennial roots, few–several-flowered. Radical leaves 2–5, narrowly–broadly elliptical to

oval, with cuneate base and acutish apex, either entire or with 2 or 3 shallow apical lobes, the petiole equalling to twice as long as the lamina. Cauline leaves either entire, narrowly elliptical, or deeply cleft almost to the base, with the median lobe large, broader (entire or with 2 or 3 shallow apical lobes), and the lateral ones linear, or with all the lobes linear. Petals small, narrowly obovate, 5–8 mm. long, 3–5 mm. broad, exceeding the sepals. Head of carpels spherical. Achenes glabrous, plump, dorsally rounded, with a short hooked beak.

If we locate the species in the system, we will find it belonging to the *R. glaberrimus* group, which has the following members: (1) *R. glaberrimus* Hook, of the Pacific coast, which is glabrous, with broad and broadly 3–lobed radical leaves, entire cauline leaves, large petals, 10–12 mm. long, 8–10 mm. broad, broadly obovate, brighter yellow, achenes with a slender beak, herbage becoming black in drying; (2) *R. ellipticus* Greene, of the Rocky Mountains of Colorado, Utah and Nevada to eastern California, which is glabrous, has always entire, acute radical leaves, usually 3-cleft cauline leaves, large petals as in *R. glaberrimus*, often even more rounded, achenes with a short, curved style, and herbage remaining green in drying; and (3) *R. Waldronii*, chiefly of the prairies of eastern Montana and western Dakota, glabrate (or glabrous), leaf-characters generally of *R. ellipticus*, but often at the same time partly coming nearer to *R. glaberrimus*, small and narrowly obovate petals, 5–8 mm. long, 3–5 mm. wide, achenes with a short, curved style, and herbage not changing color in drying, the flower and the whole plant just equalling in size young specimens of our own *R. ovalis* Raf. The size and shape of the petals certainly deserve specific distinction. The type was collected on May 14, 1912 in a moist pasture at Dickinson, Stark County, in the southwestern part of this state. It has been named in honor of its first collector, Mr. Clarence H. Waldron, the junior representative of a North Dakotan family of botanical fame.

Leeds, North Dakota.

Notes on Our Local Plants.—II.

BY. J. A. NIEUWLAND.

Class 2. ANGIOSPERMAE.

Subclass 1. MONOCOTYLEDONEAE

J. Ray and A. Haller.

Order 6. PANDANALES.

Britton, Man. 2nd. ed. p. 38, (1905).

Family 11. **TYPHACEAE** J. St. Hillaire, Expos.

Fam. 1, p. 60, (1805), also Dumort. Comment. Bot. p. 67 (1822). Fl. Belg. p. 162, (1827).

Typhoideae Ventenat, Tabl. II, p. 87 (1794).

Typhae Juss. Gen. p. 30, (1787).

TYPHA Theophrastus, Hist. Pl. 4, 11, Dioscorides 3, 123, Pliny, Nat. Hist. 16, 36 and 66, also 19, 2.

Typha Dodonaeus, Pempt. 604, (1582) Lobelius, Obs. 42, and Icon. 81 (1576) also (1571), Tragus Hist. p. 681 (1543) also Matthioli, Camerarius, Ruellius, C. Bauhin, Morison, Lonicer, etc., etc.

Typha Tour. Els. Bot. 422 (1694) and I. R. H. p. 530; (1700). TYPHA Linn. Syst. (1735), Hort. Cliff. p. 439. (1737) Gen. Pl. p. 281, (1737), p. 418 (1754). Sp. Pl. p. 971, (1753).

Typha palustris Ruellius Nat. Stirp. p. 560 (1543) also Caesalpinus, De Plantis (1582). Dodonaeus, p. 604, (1582), also *Typha palustris* Linn., Am. Acad. p. 259 (1749). *Typha aquatica* Tragus. TYPHA LATIFOLIA Linn. Sp. Pl. p. 971 (1753).

Common throughout our whole region I have observed it in many localities in every country. No. 9486 U. N. D. Herb., Notre Dame, (Laporte Co.) State Catalogue. Lake Maxinkuckee (Marshall Co.) H. W. Clarke. (Lake Co.) Deam. Millers, Ind. (Lake Co.) Umbach.

Typha media Clusius, Pann. p. 716. (1583).

TYPHA ANGUSTIFOLIA Linn. Sp. Pl. p. 971, (1753). *Massula angustifolia* (Linn.) Dulac Engl. Bot. 21, No. 1456.

(Lake Co.) Deam, (Laporte Co.) Deam. Seen only at Millers, Ind., (Lake Co.) No. 2637 U. N. D. Herb. 2 specimens. Rare.

Neither of these are quite typical. There is only a small space between the staminate and pistillate spikes, but otherwise normal. This species is common around Detroit, Mich. Scarce where I have recorded it, and I have never found it elsewhere in the area embraced by this list.

Family 12. **SPARGANIACEAE** Agardh, Theor Syst. Pl. 13. (1858).

SPARGANIUM Dioscorides, 4, 21, also Gesner, Matthioli, Lobelius, Dodonaeus, Tabernaemontanus, Morison, J. and C. Bauhin, etc., etc.

Sparganium Tour. Els. Bot. p. 422, (1694), Inst. R. H. p. 530, (1700) SPARGANIUM Linn. Syst. (1735) Gen. Pl. 281, (1737), p. 418 (1854). Sp. Pl. p. 971, (1753).

Sparganium eurycarpum Engelm., in A. Gray, Man. 2nd Ed. p. 430, (1856).

The plant grows near Benton Harbor, Mich., Berrien Co.), in abundance. Edges of ponds and back water of the river are covered by large areas of it. It was found also at Millers, Ind. (Lake Co.). No. 9290 U. N. D. Herb. from Benton Harbor. No. 9288, Roadside pool near Mishawaka, (St. Joseph Co.).

Sparganium simplex Hudson, Fl. Angl. 2nd Ed. p. 401, (1788).

No. 474 U. N. D. Herb. Sagunay (Laporte Co.) No. 2152 Millers, Ind. Lake Maxinkuckee (Marshall Co.). H. W. Clarke, Millers and Tolleston, Ind. Higley & Raddin. Pine, Ind. Hill.

Sparganium minimum C. Bauhin. Prod. p. 24, (1620) also. Pin. p. 15.

SPARGANIUM MINIMUM Fries. Sum. Veg. 2, p. 560, (1746).

No. 1807 and No. 2693 Rum Village near South Bend, Ind. (St. Joseph Co.). (Lake Co.) State Cat. Pine, Ind. (Lake Co.) Babcock. Clarke, Ind. (Lake Co.) Hill. also Millers, Ind. (Lake Co.).

Order 7. HELOBIAE.

Bartling, Ord. Nat. p. 70, (1830).

Naiadales Britton, Man. p. 40, (1905).

Family 13. **POTAMOGETONEAE** Dumortier, B. C.

Flor. Belg. Stam. p. 163, (1827). *Naiadaceae* Lindley J. Nat. Syst., Ed. 2, p. 366, (1836) in part.

Fluviales Vent. Tabl. II. p. 80, (1794); *Nayadeae* Bartling do. p. 71, also Link, also Rich, A. El. p. 416.

SPIRILLUS J. Gay. Compt. Rend. Acad. Sc. 38, p. 703, (1854)

POTAMOGETON Tour. Els. p. 199, (1644) also Inst. R. H. p. 232, (1700),Linn. Syst. (1735); Gen. Pl. p. 33, (1737); p. 61, (1754); Sp. Pl. p. 126, (1753); and nearly all post-Linnaean authors, but not *Potamogeton* Dioscorides l. 4. c. 99, = *Persicaria amphibia* Linn. Am. Acad. p. 2 and 6. (1749); nor *Potamogeton* Pliny, Nat. Hist. l. 26, 8, v. 33 = *Equisetum Telmateia* Linn. acc. to some; nor *Potamogeton* of early pre-Linnaean authors generally. *Buccaferrea* Bubani, Nuov. Giorn. Bot. Ital. V, p. 316, (1873) also Fl. Pyr. Vol. IV., p. 10, (1901), not *Buccaferrea* Micheli, P. Nov. Pl. Gen.p. 72 (1729) = *Ruppia* (Dillen) Linn, (1753).

Spirillus natans (Linn).

POTAMOGETON NATANS Linn., Pan. Suec. Am. Acad. II, p. 241, (1749); Sp. Pl. p. 126, (1753); *Buccaferrea natans* (Linn.) Bubani l. c.

Bankson Lake near Lawton, Mich. (Cass Co.); Benton Harbor, St. Joseph, Bertrand, New Buffalo, Niles, Mich. (Berrien Co.); Hudson Lake, Ind. (Laporte Co.); Notre Dame, South Bend, Lakeville, North Liberty, Ind., (St. Joseph Co.); Lake Maxinkuckee)Marshall Co.); H. W. Clarke, (Lake Co.) Hill. Pine, Ind. Wheeler. Millers, Ind. (Lake Co.); U. N. D. Herb. No. 2647.

Spirillus amplifolius (Tuckerm).

POTAMOGETON AMPLIFOLIUS Tuckerm. Am. Jr. Sc. 45, p. 38, (1843).

Millers, Ind. (Lake Co.) U. N. D. Herb. No. 2646. Lake Maxinkuckee, H. W. Clarke, (Lake Co.) Hill. Hudson Lake, Ind., Lawton, Mich., Bankson Lake, [Kalamazoo River, (Allegan Co.) Wight].

Spirillus pulcher (Tuckerm).

POTAMOGETON PULCHER Tuckerm. Am. Jr. Sc. 45. p. 38, (1843).

(Lake Co.) Hill.; Pine, Ind. (Lake Co.) W. C. Calkins, U. N. D. Herb. No. 6959; Dune Park, Ind. (Lake Co.), Higley & Raddin.

Spirillus lonchites (Tuckerm).

POTAMOGETON LONCHITES Tuckerm. Am. Jr. Sc. II. 6, p. 226, (1848); *Potamogeton americanus* C. & S.

Lake Maxinkuckee, H. W. Clarke, (Lake Co.) Hill; Pine, Ind. (Lake Co.) Wheeler; Lawton, Mich., Bankson Lake, U. N. D. Herb. No. 9501, [Kalamazoo River (Allegan Co.), Wight.]

Spirillus heterophyllus (Schreb.)

POTAMOGETON HETEROPHYLLUS Schreb. Spicil. Fl. Lips. p. 21, (1771).

Lake Maxinkuckee, H. W. Clarke. (Lake Co.) Hill.

Spirillus lucens (Linn.).

POTAMOGETON LUCENS Linn. Sp. Pl. p. 126, (1753)

Lake Maxinkuckee, H. W. Clarke. Clarke, Ind. (Lake Co.) L. M. Umbach.

Spirillus Zizii (Roth.).

POTAMOGETON ZIZII Roth, Enum. 1. p. 531, (1827).

POTAMAGETON ANGUSTIFOLIUS Berch. and Presl. Rost. 19, (1821); not same of D. C. (1805).

(Lake Co.) Hill.

Spirillus praelongus (Wulf.).

POTAMOGETON PRAELONGUS Wulf. in Roem. Arch. 3, p. 331, (1805).

Lake Maxinkuckee, H. W. Clarke, (Lake Co.) Hill. Bankson Lake near Lawton, Mich.

Spirillus perfoliatus (Linn.).

POTAMOGETON PERFOLIATUS Linn. Am. Acad. II., p. 241, (1749); Sp. Pl. p. 126, (1753).

Lake Maxinkuckee, H. W. Clarke.

Spirillus perfoliatus var. **Richardsonii** (A. Bennett).

POTAMOGETON PERFOLIATUS var. RICHARDSONII A. Bennett.

Potamogeton perfoliatus var. *lanceolatus* Robbins, A. Gray Man. Ed. 5, p. 488, (1867), not Blytt. (1861).

(Laporte Co.) Hill.

Spirillus zosteraefolius (Schum).

POTAMOGETON ZOSTERAEFOLIUS Schum. Enum. Pl. Saell. p. 50, (1801); *Potamogeton compressus* Fries, Novit, Ed. 2, p. 44, (1828); not *P. compressus* Linn., (1753).

Lake Maxinkuckee, H. W. Clarke, (Laporte Co.) Barnes, (Lake Co.) Hill. [Kalamazoo River, (Allegan Co.) Wight].

Spirillus Friesii (Ruprecht.).

POTAMOGETON FRIESII Ruprecht, Beitr. Pfl. Russ. Reichs.

4, p. 43, (1845); *Potamogeton compressus* J. E. Smith, Engl. Bot. 3, pl. 418, (1794); not Linn. (1753); *Potamogeton pusillus* var. *major* Fries, Novit. Ed. 2, 48, (1848). *Potamogeton major* Morong, Mem. Torr. Club. 3, pt. 2, 41, (1893), not *P. pusillus* var. *major* M. & K., (1823).

Lake Maxinkuckee, H. W. Clarke, Pine, Ind., Wheeler. [Kalamazoo River, (Allegan Co.) Wight.]

Spirillus foliosus var. **niagarensis** (Tuckerm.).

POTAMOGETON FOLIOSUS var. NIAGARENSIS Tuckerm. *Potamogeton pauciflorus* var. *niagarensis* (Tuckerm.) Morong, Mem. Torr. Club. 3. 2, p. 39, (1893). *Potamogeton niagarensis* Tuckerm. Am. Jr. Sc. (II) 7, p. 354, (1849).

(Laporte Co.) S. Coulter. Clarke, Ind., L. M. Umbach, Wolf Lake, Hammond, Ind. (Lake Co.) A. Chase.

Spirillus pusillus (Linn.).

POTAMOGETON PUSILLUS Linn. Sp. Pl. p. 127, (1753).

Lake Maxinkuckee, H. W. Clarke, [South Haven, Mich., (Van Buren Co.) L. H. Bailey] [Kalamazoo River (Allegan Co.) Wight].

Spirillus filiformis (Pers.).

POTAMOGETON FILIFORMIS Persoon, Syn. 1, p. 152, (1805). Lake Maxinkuckee (Marshall Co.) H. W. Clarke.

Spirillus diversifolius (Raf).

POTAMOGETON DIVERSIFOLIUS (Raf. Med. Rep. (II) 5, p. 354, (1898); *Potamogeton hybridus* Michx., Fl. Bor. Am. 1, p. 101, (1803), not Thuill. (1790). (Lake & Laporte Co.) Hill.

Spirillus pectiniformis (Linn.).

Potamogeton pectiniforme Linn. Am. Acad. II., p. 241,(1749).

POTAMOGETON PECTINATUS Linn. Sp. Pl. p. 127, (1753).

Lake Maxinkuckee, H. W. Clarke; St. Mary's Lake, Notre Dame, Ind., U. N. D. Herb. No. 9215; [Kalamazoo River, Mich. (Allegan Co.) Wight].

Spirillus interruptus (Kitaibel.).

POTAMOGETON INTERRUPTUS Kitaibel, Schultes, Œst. Fl. Ed. 2, p. 328, (1814). *Potamogeton flabellatus* Babington, Man. Bot. Ed. 3, p. 324, (1851).

Notre Dame, Ind. (Lake Co.) Hill. Lake Maxinkuckee, H. W. Clarke.

Spirillus Robbinsii (Oates).

POTAMOGETON ROBBINSII Oakes, Hovey's Magazine, 7, p. 180, (1841).

Lake Maxinkuckee, H. W. Clarke, (Lake Co.) Hill.

Spirillus obtusifolius (Mert. & Roch.).

POTAMOGETON OBTUSIFOLUIS Mert. & Roch. Deutsch. Fl. 1, p. 855, (1823). *Potamogeton compressus* Wahl. Fl. Suec. 1, p. 107, (1824), not *P. compressus* Linn. 1753.

[South Haven, Mich. (Van Buren Co.) L. H. Bailey].

Family 14. **NAYADEAE** Rich. El. p. 416.

Bartling, Ord. Nat. Pl. p. 70, (1830), also Link *Naiadaceae* Lindley, Nat. Syst. Ed. 2, p. 366, (1836); *Fluviales* Vent. Tabl. II, p. 80, (1794) in part.

NAJAS Linn., Syst. (1735).

Gen. Pl., p. 278, (1737), p. 445, (1754); Hort. Cliff. p. 437, (1737); Sp. Pl. p. 1015, (1753); *Fluvialis* Vaillant Act. Acad. p. 17, (1719); also Fl. Paris. p. 40, (1723), p. 54, (1727); also Mich. Nov. Pl. Gen. 11, (1729); *Fluvalis* Adans. Fam. des. Pl. II, p. 472, (1763); *Fluvialis* (?) of older authors.

Najas flexilis (Willd.) Rost. & Schmidt, Fl. Sed. p. 384, (1824).

Caulinia flexilis Willd. Abh. Akad. Berl. 95, (1803).

Lake Maxinkuckee, H. W. Clarke.

Family 15. **JUNCAGINEAE** Rich. also Kunth. Endlicher, (1840).

Scheuchzeriaceae Agardh, Theor. Syst. Pl. p. 44, (1858).

Triglochineae Dum. Fl. Belg. p. 141, (1827), also Am. Fam. Pl. p. 61, (1829), ex D. C. Prod.

TRIGLOCHIN C. Bauhin Pinax, p. 6, (1623).

Also Rivinus, Linn. Sust. (1735); Gen. Pl. p. 106, (1737), p. 157, (1754); Sp. Pl. p. 338, (1753). *Juncago* Tour. Els. p. 232. Inst. R. H. p. 266. *Abbotia* Raf. New. Fl. N. Am. I, p. 36, (1836).

Triglochin tricapsularis Linn., Am. Acad. p. 245, (1894).

TRIGLOCHIN PALUSTRIS Linn. Sp. Pl. p. 338, (1753).

Juncago palustris (Linn.) Moench, Meth. p. 644, (1794). *Abbotia palustris* (Linn.) Raf. l. c.

(Lake Co.) Ind. Higley & Raddin, also Hill.

HEXAGLOCHIN (Dum.) Nwd. Nov. Gen.

Triglochin Linn. l. c. etc. in part [*Hexaglochin* Dum. as section under *Triglochin*. Fl. Belg. Stam. p. 141, (1827).

Differt a *Triglochine* capsulis sexlocularibus ovoidis, cum axilla intra capsulam sexangulari minime alata, apicibus sex pedicellis decurrentibus in rachim; cum habitu et multis aliis characteribus generis praecedentis.*

Hexaglochin sexlocularis (Linn.) Nwd.

Triglochin sexlocularis Linn. Am. Acad. II. p. 245, (1749). HEXAGLOCHIN MARITIMA (Linn.) Nwd.

Triglochin maritima Linn. Sp. Pl. p. 339, (1753). *Triglochin elata* Nutt. Gen. I: p. 237, (1818); *Triglochin maritima* var. *elata* A. Gray. Man. Ed. 2. p. 437, (1852) in part.

Millers, Ind. (Lake Co.) U. N. D. Herb. No. 2656, also (Lake Co.) Hill. Chain Lakes (St. Joseph Co.) U. N. D. Herb. No. 547; also Mineral Springs, Ind. (Porter Co.) East of Bankson Lake; Indiana Harbor (Lake Co.) A. Chase, Lake Maxinkuckee, H. W. Clarke.

SCHEUCHZERIA Linn. Syst. (1735) Gen. Pl. p. 106, (1737) p. 157, (1754), Sp. Pl. p. 338, (1753).

Scheuchzeria palustris Am. Acad. II, p. 245, (1749), Linn. Sp. Pl. p. 338, (1753).

(Marshall Co.) Hessler, Lake Maxinkuckee, H. W. Clarke; Millers, Ind., Bastin; Chain Lakes, Ind. (St. Joseph Co.), I have found it in open spaces in tamarack bogs commonly throughout the region, associated with *Sarracenia purpurea, Oxycoccus macrocarpus* or *Drosera rotundifolia, Menyanthos trifoliatus* (Buckbean). Other places where I have seen it without collecting it are; Bankson

* Though this plant genus, the type of which is *Triglochin maritima* Linn. Sp. Pl. p. 339, (1753), had scarcely any other good characters than that of a capsule with six rather than three carpels, it could not reasonably be kept in *Triglochin*. So great is this a difference for purposes of classification that we wonder how Linnaeus himself could have retained the plant in his group *Hexandria trigynia*, where one would hardly look for it with such contradictory characters. The habit of *Hexaglochin* and *Triglochin* are the same and for scarcely any other reason could a follower of the Linnaean or any other system have kept the plants together. Many botanists object to habit as a satisfactory character for generic separation and such conservatives can not object. The capsules, however, are very different in habit, excluding *T. striata* which according to Rafinesque may perhaps constitute a third separate genus with characters quite as notable.

Lake (3 miles east) Dune Park, Lakeville, North Liberty, Tamarack (Laporte Co).

Family 16. **ALISMACEAE** D. C. Fl. Fr. 3, p. 181, (1805), also Dum. Comment. Bot. p. 64 (1823). Fl. Belg. p. 135 ex Vent.

ALISMA (Pliny) Nat. Hist. l. 25, c. 10 & 77. Valerius Cordus (1561).

Also ALISMA Linn. Syst. (1735) Gen. Pl. p. 108, (1737), p. 160, (1754); Sp. Pl. p. 342, (1754); in part. *Plantaginastrum* Heister, Syst. 7, (1748). *Ranunculus* Tour. Els. p. 241, (1694). Inst. R. H. p. 292, (1700), in part. *Damasonium* Dioscorides and Pliny, is a synonym for *Alisma*.

Alisma erecta Linn. Am. Acad. II, p. 245, (1749).

ALISMA PLANTAGO Scopoli, 1771.

Alisma Plantago aquatica Linn. Sp. Pl. p. 342, (1753).*

Lake Maxinkuckee, Ind., H. W. Clarke; Bankson Lake, Mich.; Chain Lakes, Ind. (St. Joseph Co.); St. Joseph's Lake, Notre Dame, Ind.; Rum Village, South Bend, Ind.; Lakeville, Ind.; Benton Harbor, St. Joseph, New Buffalo, Bertrand, Mich; Hudson Lake, Tamarack, and Sagunay, Ind. (Laporte Co.); (Laporte Co.) Deam, Barnes. Mineral Springs (Porter Co.); Millers, Dune Park, Gary, (Lake Co.); Michigan City, Ind.; C. D. Mell; Millers, Ind., L. M. Umbach.

SAGITTA Pliny, Nat. Hist. l. 21, c. 17 & 68, also numerous authors before Linnaeus.

Sagittaria Gerard (1576), not *Sagittaria* Lobelius.

SAGITTARIA Linn. Syst. (1735), Gen. Pl. p. 289, (1737); p. 429, (1754); Sp. Pl. p. 993, (1753). *Ranunculus* Tour. Els. p. 241, (1694); Inst. R. H. p. 292, (1700).

Sagitta latifolia (Willd.).

SAGITTARIA LATIFOLIA Willd. Sp. Pl. 4, p. 409, (1806).

Bankson Kake, Bertrand, Benton Harbor, St. Joseph, Mich.; Rum Village at South Bend, Notre Dame Lakes, Lakeville, Chain Lakes, Dollar Lake (St. Joseph Co.); Millers & Dune Park, (Lake Co.) Tamarack, Hudson Lake, Michigan City, (Laporte Co.); Mineral Springs, (Porter Co.

* The Linnaean name not being a binary is inadmissable in a strictly binary system. For other synonyms see Am. Mid. Nat. II. p. 101.

Sagitta graminea (Michx.).

SAGITTARIA GRAMINEA Michx. Fl. Bor. Am. 2, p. 190, (1803). Millers, Ind., U. N. D. Herb. No. 2156. (Laporte Co.) Barnes. Lake Maxinkuckee, H. W. Clarke. Millers, Ind., L. M. Umbach.

Sagitta rigida (Pursh.).

Sagittaria rigida Pursh, Fl. Am. Sept. 397, (1814).

Sagittaria heterophylla Pursh, l. c. p. 397 not *S. heterophylla* Schreb. (1811).

Millers, Ind. Higley & Raddin. Lawton, Mich. (Cass Co.), U. N. D. Herb. No. 2341.

Sagitta engelmanniana (J. G. Smith).

SAGITTARIA ENGELMANNIANA J. G. Smith. Mem. Torr. Bot. Club. 5, p. 25, (1894); *Sagittaria variabilis* var. *gracilis* S. Watson, in A. Gray, Man. Ed. 6, p. 555, (1889), not Engelm.

Notre Dame, Ind., U. N. D. Herb. Herb. No. 2547. Lake Maxinkuckee, H. W. Clarke.

Family 17. **VALLISNERIACEAE** Dumort. Anal. Fam. p. 54, (1829).

Vallisnerieae Dum. Fl. Belg. p. 135, (1827), as tribe under *Hydrocharideae.*

PHILOTRIA Raf. Am. Month. Mag. 2, p. 175, (1818). *Elodea* Mich. Fl. Bor. Am. I., p. 20, (1803), not *Elodes* Adanson, (1763); *Udora* Nutthall, Gen. 2, p. 242, (1818).

Philotria canadensis (Michx.) Britton, Sc. II., 2, p. 15, (1895). *Elodea canadensis* Michx. l. c.

Anacharis canadensis Planch. Ann. Sc. Nat. III. 9, p. 75, (1849). (Laporte Co.) Barnes; Millers, Ind., Benton Harbor, Mich., Notre Dame, Ind., Rum Village, South Bend, etc., very commom.

VALLISNERIA Micheli, Nov. Pl. Gen. p. 12, (1729).

Also VALLISNERIA Linn. Gen. p. 300, (1737), p. 446, (1743); Hort. Cliff. p. 454, (1737); Sp. Pl. p. 1015, (1753).

Vallisneria spiralis Linn. Sp. Pl. l. c. (1753).

Lake Maxinkuckee, H. W. Clarke,* (St. Joseph Co.) Ind. Barnes.

(To be continued.)

* The citations attributed to H. W. Clarke, L. H. Bailey, L. M. Umbach, A. Chase, Wight and some by Hill and others were taken from specimens deposited in the U. S. Herbarium in the Smithsonian Institution, where through the kindness of Dr. J. N. Rose, I was enabled to examine the specimens during the summer vacations of the last three years.

Daily Observations of Our Birds.—I.

BY BROTHER ALPHONSUS, C. S. C.

SEPT. 4, 1912.

5:30 a. m.—Many Swifts and two Martins flying about a church steeple. The Martins looked large compared with the Swifts.

7:30 to 8:30 a. m.—Jays were numerous and noisy. A few notes of a Song Sparrow. Saw a Grackle and a Dove. Warbling Vireos plentiful and in full song. Saw a Baltimore Oriole—no note. Many Indigo Birds—counted seven sitting on a fallen branch—all brown. Note of Downy Woodpecker. A few notes of the Goldfinch. Flicker's call-note. A few notes of the Pewee. A note somewhat similar to the White-breasted Nuthatch's, but sufficiently different to make me look carefully for the bird. In a minute out flew a Red-breasted Nuthatch—the first arrival of this species from the north. Two Catbirds in bushes; heard call-note.

4:45 to 5:15 p. m.—A few Robins, and many Grackles in tops of trees. A Red-headed Woodpecker resting on top of a cross on a tower; the bird flew out after a passing insect. Note of young Goldfinches.

SEPTEMBER 5, 1912.

5:30 a. m.—Many Swifts and a few Robins seen.

7:30 to 8:30 a. m.—Jays plentiful; heard several different call-notes and their bell-like note. Saw some Robins and one Song Sparrow. A Grackle flew overhead. Two Kingfishers flew out over the lake. Warbling Verios not so much in evidence as yesterday, but still in song. Indigoes numerous. Goldfinches here and there. Note of Flicker. Saw first Yellow-legs this month.

4:15 to 5:15 p. m.—Hawk-note of Jay. Call-note of Robin. Note of Grackle. Note of Screech Owl at 5:10. Saw a few Swifts. Song of Warbling Vireo. Indigo call-note. Tree toad note of Red-headed Woodpecker. Notes of Downy Woodpecker, White-breasted Nuthatch, Goldfinch. Saw and heard a Flicker.

7 p. m.—Note of Killdeer.

SEPTEMBER 6, 1912.

5:30 a. m.—Call-note of Robin. Saw several Grackles.

7:30 to 8:30 a. m.—Jay-note. Saw one Song Sparrow. Grackles seen and heard. One Dove seen. Warbling Vireo still in full song. Indigo call-note. Catbird's call. Note of White-breasted Nuthatch. Call-note of Goldfinch.

5:15 to 5:45 p. m.—Notes of Jay, Robin, White-breasted Nuthatch. Two telephone wires lined with Cowbirds for about 100 feet. The birds were perched close together, the males and females black and brown respectively. Many others in company with many Grackles were bathing just beneath at the edge of a lake. I have observed this bathing of Cowbirds before at this time of the year. This was the first time I had seen any of this species since August 15. Saw one Song Sparrow—no notes since the 4th inst. A few Swifts in sight. Two Flickers in the path ahead of me.

6:45 p. m.—Note of Killdeer.

SEPTEMBER 7, 1912.

5:30 a. m.—Call-notes of Jay and Robin.

7:30 to 8:30 a. m.—Caw of Crow—first since Aug. 31. A variety of unmusical notes from a Jay. Call-note of Robin. Grackles seen and heard. Warbling Vireo's note. Saw one of this species eating a worm in a sycamore tree. Indigo call-note. Unmusical notes of Catbird. Call-notes of Goldfinch, Flicker.

4 to 5 p. m.—Call-notes of Jay, Robin, Grackle, Indigo Bird, Catbird, Goldfinch.

7 p. m.—Note of Killdeer.

SEPTEMBER 8, 1912.

5:30 a. m.—Saw Swifts and heard Robins.

7:30 to 8:30 a. m.—Call-notes of Jay and Robin. Saw one Song Sparrow—no note. Note of Grackles. Startled a Dove. Few feeble notes of Warbling Vireo. Call-notes of Indigo Bird and Catbird. A shrill note and tree toad note of Red-headed Woodpecker. Saw one Pewee—no note.

4:15 to 5:15 p. m.—Call-notes of Jay, Song Sparrow, Grackle, Flicker. Saw a Dove. Caw of a Crow.

7 p. m.—Note of Killdeer. Call-note of Robin.

SEPTEMBER 9, 1912.

5:30 a. m.—Call-notes of Jay and Robin.

10 to 10:45 a. m.—Call-notes of Jay, Robin, Grackle. A few notes of Warbling Vireo. Loud note of White-breasted Nuthatch. A Pewee—song has ceased.

4:45 to 5:15 p. m.—Call-notes of Jay and Robin. A few Grackles seen and heard. Saw several Swifts. Note of young Goldfinch.

SEPTEMBER 10, 1912.

8 a. m.—Call-notes of Jay, Robin, Grackle. Feeble notes of Warbling Vireo. A few Swifts above a building.

5 to 5:30 p. m.—Grackles and Cowbirds very numerous, perched on dead branches at the top of a tall poplar. Jays and Robins calling here and there. Flicker's note frequently heard.

SEPTEMBER 11, 1912.

5:30 a. m.—Saw a flock of Grackles wheeling above the trees.

10 a. m.—Bell-like note of Jay. Call-note of Robin.

4 to 5 p. m.—Caw of Crow. Jay-note. Grackles seen. A few Swifts high over buildings. A Brown Thrasher flew into an apple tree—first seen since Aug. 26. A Herring Gull wheeling and calling over a lake.

7 p. m.—Note of Yellowlegs, repeated loudly.

SEPTEMBER 12, 1912.

5:30 a. m.—Heard Swifts outside a window.

9 to 9:30 a. m.—Jay-note repeated loudly by two birds. Call-note of Song Sparrow. Feeble note of Warbling Vireo. Two distinct call-notes of a Brown Thrasher. Caw of Crow. Call-note of several Bluebirds—first since Aug. 11. A Kingfisher flew low over a lake and uttered its note while rising to alight in a tree.

6 p. m.—Swifts seen.

SEPTEMBER 13, 1912.

8:45 to 9:30 a. m.—Caw of Crow. Jay-note. Call-note of Robin. Catbird call -note. Saw two Pewees. First Pine Warblers arrived from the north. Heard their call-note.

3:15 to 4 p. m.—Call-notes of Jay, Robin, Song Sparrow. Grackles in flocks.

SEPTEMBER 14, 1912.

8:45 to 9:30 a. m.—Caw of Crow. Loud calls of a Jay. A large flock of Grackles came into a grove and began to chatter. Saw a Catbird—silent. A Downy Woodpecker climbed around a slender branch as cleverly as a Chicadee. Loud note of White-breasted Nuthatch. Call-note of Goldfinch. Note of Flicker; one flew out of a tree. Deep note of Cuckoo. Pine Warblers plentiful and active in tree tops; heard their call-note.

4:30 to 5 p. m.—Call-notes of Robin, Jay and Kingfisher.

SEPTEMBER 15, 1912.

11 to 11:30 a. m.—Call-notes of Jay and Grackle. Unidentified Warblers seen.

4 to 5 p. m.—A few Grackles and Cowbirds on the dead branches of a poplar. Flock of Crows noisy in a nearby grove. A small number of Swifts seen. Heard a White-breasted Nuthatch.

SEPTEMBER 16, 1912.

8:30 to 9:30 a. m.—Jay-note always in ear-shot. Notes of Grackle and young Goldfinch. White-breasted Nuthatch heard here and there. A number of Pewees seen, and call-note heard once. Black-throated Green Warbler arrived; call-note of same.

2:15 to 3:15 p. m.—A flock of Grackles flew overhead. Note of White-breasted Nutharch. A Yellow-billed Cuckoo, which remained still for a minute and then changed its position to a nearby branch Here the bird saw a worm, which it caught and began to eat. Before finishing, the Cuckoo flew to another tree and was lost to sight.

SEPTEMBER 17, 1912.

8:30 to 9:30 a. m.—Saw a Song Sparrow; heard its call-note. A Dove flew overhead. A House Wren seen and its call-note heard. Catbird call-note. Note of Downy Woodpecker. Saw a Wood Pewee.

SEPTEMBER 18, 1912.

7:30 to 8:15 a. m.—Cawing of Crows. Note of Grackle. Saw a single Swift. Call-note of Bluebird.

3:30 to 4:15 p. m.—Jay-note. A Cowbird seen.

SEPTEMBER 19, 1912.

9 to 10 a. m.—Saw two Jays—rather quiet. Several Swifts seen. One Redstart flitting in a tree; first seen since spring.

4 to 5 p. m.—Note of Meadowlark—first heard since July 17; first seen since Aug. 1. A flock of Robins flew overhead.

SEPTEMBER 20, 1912.

5:15 a. m.—Saw three Robins and heard call-note of others.

4:30 to 5 p. m.—Jay-note. A Robin calling loudly. Cowbirds very numerous on the dead branches of a tall poplar. Their note thin and uttered in chorus. The tree top was crowded for ten minutes, when many departecd. While the branches were thickly covered, some of the birds moved frequently. Among

the Cowbirds were a few Grackles. A few Swifts above the poplar.

SEPTEMBER 21, 1912.

9 to 9:45 a. m.—Saw a Jay and heard its call frequently. Call-note of Song Sparrow and Killdeer. A Kingfisher heard ahead of me and seen flying when I had advanced a short distance. Indigo call-note. Young Goldfinch heard. Black-throated Green Warbler high up in an oak.

4:30 to 5 p. m.—Jays calling. Saw a White-breasted Nuthatch.

SEPTEMBER 22, 1912.

11 to 12 a. m.—A Jay seen. Several Cowbirds were heard, hidden in a maple tree. In order to see them I had to go under the tree. Two notes were heard—a bubbling note and part of a whistling note. Call-note of Goldfinch.

4:30 to 5:30 p. m.—Jays calling. Call-note of Robin. Song of two Meadowlarks. Grackles numerous and noisy in an elm grove. Note of Killdeer. Several large flocks of Cowbirds passed, one close behind another. The birds alighted in a grove ahead of me and when I arrived in the grove, which was near a lake, I found many of them drinking. They came one by one to the edge of the lake, but left in small flocks, the black and brown of the males and females plainly visible. In drinking some of the birds rested on matted weeds at the surface of the water. A large number of Swifts were flying, some high and others low, over the lake. Those flying low would strike the water now and then, making a splash. This was the first time I ever remember to have seen Swifts bathing. Why was this my first observation? Perhaps because Swifts only bathe toward evening, and I may never have been near a lake just at the opportune time to witness the performance.

SEPTEMBER 23, 1912.

Crows in a grove very noisey. Jays calling. Call-note of Robin and Song Sparrow. A Kingfisher dropped into the water and returned to a tree nearby, but shifted its position twice, making it impossible to see whether the bird caught a fish or not. Note of young Goldfinches, in the top of an elm; undulating note of old bird. Several Black-throated Green Warblers in walnut trees; note, very low. Another species of the Warbler family, with faint chestnut on sides and two white wing bars; the undeveloped plumage making it difficult to say if it was a Chestnut-sided or a Bay-breasted Warbler.

4 to 4:30 p. m.—Jays calling. Meadowlarks singing loudly. Killdeer note. Call-note of Robins; one seen.

SEPTEMBER 24, 1912.

6:30 a. m.—Swifts flying high.

9:15 to 10 a. m.—Jays calling. Call-note of Robin; saw two. Song Sparrow in song; saw many in a vegetable garden. Killdeer note. Note of White-breasted Nuthatch. Yellow-billed Cuckoo sitting in a mulberry tree.

3:45 to 4:30—Jays making a variety of noises. A few Swifts seen.

SEPTEMBER 25, 1912.

6:30 a. m.—Swifts seen.

8 to 8:30 a. m.—Jays seen and heard. Note of Song Sparrow repeated. One Grackle in the top of a poplar. Killdeer note in several places; saw one bird. Notes of old and young Goldfinches. A Phoebe in a birch tree; first seen since July 30—an absence of 56 days.

3:45 to 4:30 p. m.—Jays calling. Notes of Grackle, Killdeer. Cowbirds perched on dead branches of a poplar, uttering a thin note, and changing their position frequently. Call-note of Goldfinch.

SEPTEMBER 26, 1912.

11 to 11:45 a. m.—Jay-note.

4 to 4:45 p. m.—Passed the poplar where Cowbirds are seen, but none were in the tree. When I returned a number were on the dead branches, and, as usual, moving and uttering a low thin note. Heard Grackles here too. Note of Meadowlark, Downy Woodpecker. Call-note of Song Sparrow. White-throated Sparrow arrived—5 days earlier than last autumn.

SEPTEMBER 27, 1912.

11 to 11:30 a. m.—Two Jays flying. Call-notes of Song Sparrow and Goldfinch. Note of Meadowlark.

3:45 to 4:30—Many Jays flying about along a country road lined with trees. Killdeer note. Saw Meadowlarks—in song. Cowbirds absent at 3:45; present in the poplar at 4:30; Grackles heard here also. Saw Goldfinches and heard their call-note. A note of the Flicker. White-throated Sparrows plentiful in low land covered with bushes; heard their call-note. Caw of Crows.

SEPTEMBER 28, 1912.

9 to 10 a. m.—Crows cawing. Jays calling. Call-note of Song Sparrow. Notes of Meadowlark and Grackle. A few Swifts seen. Call-note of Goldfinch; note of young birds. A White-breasted Nuthatch seen. Note of Downy Woodpecker. Golden-crowned Kinglet arrived—3 days ealrier than last autumn. The Snowbird arrived—12 days later than last fall.

3:45 to 4:30 p. m.—Saw some Crows. Jays calling. Call-note of Song Sparrow. Note of Meadowlark. Call of Robin.

SEPTEMBER 29, 1912.

11 to 11:45 a. m.—Jays calling. Saw one Robin Feeble notes of a Song Sparrow. Note of Downy Woodpecker; saw the bird on a telephone pole. A Goldfinch in autumn plumage.

3:30 to 5 p. m.—Caw of Crow. Call of Bluebird. Song of Meadowlark. A flock of Vesper Sparrows—first seen since Aug. 16. Two flocks of Cowbirds passed at 4:30. A Phoebe perched on the back of a bench. Call-note of White-throated Sparrow. A Snowbird in a spruce tree.

SEPTEMBER 30, 1912.

9 to 9:45 a. m.—Few notes of Song Sparrow. A Phoebe in a young walnut tree. In same kind of trees nearby saw the first two Myrtle Warblers, which were driven away by the Phoebe. A little farther on I met many of these warblers. Last autumn the Myrtle Warbler arrived Oct. 11.

3:30 to 4:30.—A flock of Goldfinches in an osage hedge. A Red-winged Blackbird flew overhead—first seen since Aug. 12. Call of Song Sparrow—saw the bird in some brush.

A Correction.

There seems to be a rather general tendency on the part of very recent phytographers to decapitalize proper names of persons used as specific terminations of plant names. Presumably this error arose from a misinterpretation of §4, Art. 26, Rec. X. of the Vienna Code. The rule says that "specific names begin with a small letter except those that are taken from names of persons (substantives or adjectives).

Formerly it was the custom though an unwarranted one,

of writing the name, *Sanguinaria Canadensis*. The last word should be written with a small letter, i. e., *Sanguinaria canadensis*. Proper adjectives at least of places are not capitallized in Latin. Why the rule should have been interpreted thus for specific names of persons does not seem clear. As the breaches of rule seem to be made by botanists not apparently in sympathy with the Vienna Code and its demands in general, it would appear that occasion is made to show this want of sympathy in the case in question. We are expected to write the names *Lisimachia Hemsleyi, Asplenium Andrewsii, Cenchrus Palmeri* not because the Vienna Code or any other botanical code demands it, but for the same reason that we are supposed in English to write the man's name John Smith with capitals. It is required by the dictates of correct grammar. Even the older botanists, well versed in Latin as they usually were, have always written adjective local names decapitalized, and likewise have written personal names as nouns in the genitive with capital letters. Of course it is possible through the blundering example of some to carry the abuse to the contrary so far that it may come to be a custom in America or even elsewhere, but it will, by competent or educated people at least, be relegated to the same class of customs as that of using a singular verb in connection with a plural subject. In fact misuse of principles that ought to be familiar to every high school student of Latin can scarcely result in much credit to our modern phytography.

Obituary.

THE TWO HOWELLS, BOTANISTS.—In the death of Thomas Howell, which occurred at Portland, Oregon, on the third of December, 1912, there passed from this life one of the most remarkable men who has had part in the making of West North American botany. Mr. Howell was born in Missouri, 9 Oct., 1842, and was therefore only some weeks past seventy years of age. It was as a boy of eight years that he entered the country of the Far Northwest in 1850; his parents, with their several children, having traversed the wide wilderness between Missouri and Oregon, by ox team at that early period.

Well though the name of Howell is known in botany, I have no information as to just when, or under what influence his at-

tention was drawn to the study of plants, and the collecting of specimens; but from about 1880 forward he, and for a time his brother Joseph made extensive collections in many parts of Oregon, their labors being rewarded by the discovery of many new species. These rich accessions to the Northwestern flora were published by Engelmann, by Gray, by Watson, and many of the later by myself; though still later a great number were presented in Mr. Howell's monumental Flora by himself.

That which is most peculiar and noteworthy about Mr. Howell's career is, that he accomplished the greatest amount of meritorious and valuable scientific work that was ever done by any man of any epoch, on so very rudimentary an education in letters. I am informed by Mr. Howell's and my own very valued friend, Mr. M. W. Gorman of Portland, that this man's educational opportunities were limited to six months attendance at log school house on Sauvier's Island in his boyhood as a pioneer. The correspondents of Mr. Howell all must have noted that his handwriting always was like that of some child of four or five years, first learning to form letters and connecting them into words; nevertheless, as to spelling, and grammar in general, the lapses were rather few.

Respecting Mr. Howell's abilities as a botanist I had always a very high opinion, but the indications of these, as well as the fuller account of his career, must await further study.

Mr. Joseph Howell, a brother of Thomas, and his senior by something like a dozen years, had been claimed by death only a few weeks earlier. He died, so Mr. Gorman informs me, at Sauvier's Island, 7 October, in his eighty-third year. The interest of both had at first been engaged in botanical exploration and research; but the elder of the two, having a family to provide for, soon withdrew from that pleasant scientific avocation which took up much time, and brought no emolument; and this one, at his recent death left his family in comfortable circumstances; but not so the other, who had given the best of his life to botany, and then died penniless.

Most readers of the work of Thomas Howell naturally attribute to him all the species bearing the Howell name; but this will not be quite correct; and I gladly present here Mr. Gorman's manuscript list of plants the discovery of which was due to the labors of the elder brother, Joseph Howell.

Isoetes Howellii, Engelm. June, 1885.
Triteleia Howellii (Wats.) June, 1878.
Montia Howellii Wats. April, 1881.
Saxifraga Howellii, Greene, April, 1891.
Astragalus conjunctus, Wats. May, 1880.
Astragalus Hoodianus, Howell. June, 1883.
Epilobium Hammondi, Howell. Aug. 1888.
Velaea glauca, C. & R. April, 1889.
Coelopleurum longipes, C. & R. 1891.
Gentiana Orfordii, Howell, Oct. 1892. (*Edward L. Greene.*)

Michigan Bird Life.

Professor Walter Bradford Barrows has placed every student of birds in our country under lasting obligations for his very complete work entitled "Michigan Bird Life." With the painstaking care that only a true lover of birds can show, he has written biographies of our birds that are very satisfactory to the observer of bird life. His own extensive observations and a very wide reading of books on ornithology, with a pleasing style, have made an excellent reference book on this branch of natural history.

The introduction to the book is a very valuable paper covering the following topics:—Climate, Distribution of Plant Life, Distribution of Animal Life, Bird Life in Michigan, Recent Changes in Bird Life, How To Study Birds, Migration. The body of the book has two divisions: Water Birds and Land Birds.

Professor Barrow's description of his work is as follows:

"Special Bulletin of the Zoological Department of the Michigan Agricultural College. Just Published. 822 pages, 70 uncolored plates and 152 text figures. Weight about 4 lbs. Contains full descriptions of all birds found in the state, with an account of the migration, food, song, nest, eggs and general habits of each species. This bulletin can not be distributed gratis but will be supplied at actual cost plus transportation. It is sold at the College for 45 cents, in paper covers, or 60 cents, bound in cloth; transportation 35 cents additional and must be prepaid.

Applications should be sent to Secretary A. M. Brown, East Lansing, to whom all checks, drafts, and money orders should be made payable. Please do not send stamps."

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AD DIEM X. DECEMBRIS MDCCLXXXVIII.

L. H. S.

LUNDÆ,
TYPIS BERLINGIANIS.

PLATE I. GEISER on NOMENCLATURE.